RAMBOLL ENVIRON

ENVIRONMENT
& HEALTH

MILLER CHEMICAL ENVIRONMENTAL STATUS REPORT

Miller Chemical, Hanover, Pennsylvania
Date: December 23, 2015

To: Kathy Horvath, PADEP
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During the time period from December 6, 2015 through December 20, 2015, the following environmental activities were conducted in relation to the Miller Chemical site:

Act 2 Activities:

- Miller completed the Act 2 soil sampling activities at the remaining off-site properties.
- Ramboll Environ prepared an addendum to the Act 2 Soil Sampling and Analysis Plan to document the collection of soil samples for agricultural analysis and the collection of samples from certain soil piles on the off-site agricultural properties.
- Ramboll Environ responded to inquiries regarding sampling progress and field conditions.
- Analysis of Act 2 soil samples continues.

Environmental Monitoring:

- Ramboll Environ received and tabulated analytical results for stream sampling conducted on December 3; the results are attached to this status report.
- Ramboll Environ continued to maintain and monitor remote in-stream analyzers in Slagle's Run.
- Ramboll Environ continued to collect rainfall data via a remote weather monitoring station at the site. Rainfall data for the Hanover rain gauge are included in the tabular summary of surface water sample results. Precipitation recorded at the site (at least 0.1 inch) during the past 2 weeks includes: 12/14, 16:00 hrs – 0.1 inches over 1.5 hours; 12/14, 23:20 - 0.1 inches over 15 minutes; 12/17, 06:30 - 0.5 inches over 9 hours.
- On December 10, 2015, Ramboll Environ received PADEP approval for a modified schedule for surface water sampling and remote in-stream monitoring, as proposed in a December 1, 2015 memorandum.

Permits and Authorizations:

- On December 14, 2015, Ramboll Environ received comments from PADEP on the GP-7 application for the proposed dry creek crossing on the Whisler property. Ramboll Environ is preparing a response to address these comments.

Off-Site Activities

- Miller Chemical and Ramboll Environ participated in a site meeting with off-site property owners, USACE, PADEP, and Adams County Soil Conservation Service on December 9, 2015.
- Miller and Conewego Enterprises completed the preliminary off-site restoration activities within Area 1 and Trench B on December 7 and 8, 2015, and also completed additional work discussed with USACE during the December 9 meeting, on December 16, 2015.
- Ramboll Environ collected composite soil characterization samples from piles of soil located on the eastern bank of the dry creek on the Bare Development and Whisler properties; the soil piles are assumed to have been removed from the dry creek to promote better flow during the emergency response activities.
- Miller Chemical staff placed temporary fencing along portions of the property line between the Bare Development and Whisler properties in order to close gaps in existing fencing.

On-Site Activities:

- Miller Chemical secured approval for the disposal of additional on-site soils at Modern Landfill; the approval will be used as necessary to support ongoing construction activities, which may require off-site disposal of soils that do not meet geotechnical specifications.

Upcoming Activities:

- Prepare and submit to USACE an Initial Monitoring Report for the preliminary off-site restoration activities by January 8, 2016.
- Continue to receive analytical data from Act 2 soil sampling and conduct independent data validation.
- Conduct next surface water sampling event in early January.
- Conduct final stormwater sampling event during next rain event that results in appreciable flow in the dry creek.
- Remove in-stream analyzers after December 30, 2015 as approved by PADEP.

Recent Surface Water Sampling Results (DRAFT VERSION reflecting data received to date - may be revised or updated)				Slagle upstream	Slagle upstream	Slagle downstream 2	Slagle downstream 2	Hanover Intake	Hanover Intake	South Branch upstream	South Branch upstream	South Branch downstream	South Branch downstream	NOMA Intake	NOMA Intake
				12/3	12/3	12/3	12/3	12/3	12/3	12/3	12/3	12/3	12/3	12/3	12/3
Analyte	**MCL (ug/L)**	**Lowest Benchmark** (ug/L)**	**Stormwater Benchmark (ug/L)**	Total Metals	Dissolved Metals	Total Metals	Dissolved Metals	Total Metals	Dissolved Metals	Total Metals	Dissolved Metals	Total Metals	Dissolved Metals	Total Metals	Dissolved Metals
Aluminum	200	87	-	ND	ND	56	ND	290	ND	130	53	140	ND	180	ND
Antimony	6	5.6	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	10	0.02	850	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Barium	2000	4	-	39	39	39	44	44	41	31	31	34	34	34	33
Beryllium	4	0.66	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Boron	-	1.6	-	11	13	22	27	26	26.5	12	12	25	26	25	26
Cadmium	5	0.25	34.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Calcium	-	116000	-	67000	-	72000	-	55000	-	33000	-	42000	-	43000	-
Chromium	100	85	-	ND	ND	ND	ND	0.985	ND	0.68	ND	0.92	0.55	1.3	0.84
Cobalt	-	19	1650	ND	ND	ND	13	1.7	1.25	ND	ND	0.59	ND	0.58	ND
Copper	1000	9	1000	1.3	1.3	5.1	4.9	3	1.85	1.6	1.1	2.5	2.1	2.4	2.2
Iron	300	300	118000	100	ND	220	140	560	ND	290	120	290	80	310	55
Lead	5	2.5	450	ND	ND	2.1	2.2	0.99	ND	ND	ND	0.66	ND	0.61	ND
Magnesium	-	82000	-	10000	-	11000	-	13500	-	7000	-	8600	-	10000	-
Manganese	50	50	87500	17	16	51	55	20	2.3	23	17	18	14	21	13
Mercury	2	0.026	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.12
Molybdenum	-	73	-	ND	ND	ND	ND	0.765	0.84	ND	ND	ND	ND	0.77	0.72
Nickel	-	52	6900	ND	ND	13	14	1.6	1.2	0.53	ND	0.92	0.71	0.89	1.4
Potassium	-	53000	-	2700	2300	2800	2900	4500	4350	3300	3400	6000	5600	6300	5700
Selenium	50	1	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	100	3.2	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	-	680000	-	33000	30000	32000	29000	18500	18000	7900	6400	16000	15000	18000	16000
Thallium	2	0.24	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	5000	120	7900	31	15	37	29	28	14.5	23	12	28	16	20	15
Sulfate	250000	250000	-	15000		20000		24500		14000		17000		20000	
Chloride	250000	230000	-	68000		64000		33000		19000		26000		30000	
Phosphorus, Total (as P)	-	-	-	ND		54		ND		63		56		80	
Ortho-Phosphate (as P)	-	-	-	ND		ND		ND		ND		ND		60	
Nitrogen, Ammonia (as N)	-	19	50500	ND		ND		ND		ND		ND		ND	
Nitrite (as N)	1000	20	-	ND		2500		ND to 220		ND		ND		ND	
Nitrate (as N)	10000	10000	-	1800		1700		2550		2300		2100		2300	
Nitrogen, Nitrate-Nitrite	10000	10000	-	-		-		-		-		-		-	
Nitrogen, Total Kjeldahl	-	-	-	ND		ND		ND		ND		ND		700	
Total Organic Carbon	-	-	-	3300		4400		2300		5800		5200		5700	
Alkalinity, Total (CaCO3)	-	-	-	130000		150000		130000		80000		74000		80000	
Chemical Oxygen Demand	-	-	-	23000		49000		ND		ND		ND		20000	
Total Dissolved Solids	-	-	21645479	-		-		-		-		-		-	
Total Organic Halides (TOX)	-	-	-	7.9		9.4		9		6.9		ND		ND	
Temperature (˚C)	-	-	-	9.05		8.29		9.52		6.75		5.709		7.63	
pH (Std units)	6.5	6.5	-	8.07		7.94		8.14		7.76		7.55		6.4	
ORP (mV)	-	-	-	155		160		174		17.7		187		224	
Conductivity (mS/cm)	-	-	-	0.426		0.429		0.351		0.205		0.285		0.291	
Turbidity (NTU)	-	-	-	0.9		0.7		61.8		5.4		18.7		43.7	
DO (mg/L)	-	-	-	8.08		7.07		8.43		7.85		9.11		8.81	
Total Hardness (Mg+Ca as CaCO3)	-	-	-	210000		230000		195000		110000		140000		150000	
			Daily Rainfall Hanover Gage (in)	0.00		0.00		0.00		0.00		0.00		0.00	

1) No results exceeded the stormwater benchmarks developed using PADEP's PENTOX model.

2) '"-" means not sampled or not yet received; "ND" means not detected

** Benchmarks include PADEP ambient water quality and human health criteria for surface water, USEPA Region 3 freshwater benchmarks for ecological risk, and drinking water MCLs.